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CANADA Medical Record

MONTREAL

A Monthly Journal of Medicine and Surgery

EDITOR

F. WAYLAND CAMPBELL, M.A., M.D., D.C.L., L.R.C.P., LOND.

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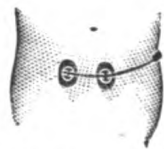
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— CONTENTS —

ORIGINAL COMMUNICATION.	PAGES.
Bronchitis and Allied Disorders	337
—	
SELECTED ARTICLES.	
Cough in Pulmonary Phthisis	342
Laboratory Diagnosis—Its relation to the General Practitioner	346
Iron in Therapeutics	350
—	
MEDICINE AND NEUROLOGY.	
Discovery of the Germ of Smallpox.	353
Mesotan, the External Antirheumatic.	355
Arsenic in the Treatment of Chorea	357
Treatment of Tuberculous Glands of the Neck.	359
Dangers from the Indiscriminate Use of Morphia	360
Chronic Pancreatitis.	361
Some Remarks on the Treatment of Intest- inal Pains	362
Post-Operative Malaria, with a Report of Two Cases	365
Acute Articular Rheumatism	365
Puerperal Insanity	367
Notes on a New System of Treatment in Pulmonary Phthisis.	369
Hot Water in Scarlatinal Nephritis.	369
Night Sweats	370
—	
Chronic Eczema	370
The Prevention of Sickness after Anes- thetics	370
—	
SURGERY.	
Treatment of Hematomata with Olive Oil	371
The Entrance of Air into the Veins	372
Cases illustrating some Important Points in the Diagnosis and Treatment of Abdominal Contusions associated with Visceral Injuries	376
The Principles of Protection against Roentgen Light Dermatitis.	377
The Radical Cure of Inguinal Hernia with Local Anesthesia	378
Goitre	379
Protargol and Its Uses	380
The Use of Argyrol in the Treatment of Acute Gonorrhea	381
A new Method of Foreign Bodies from the Ear	382
Egg in Felon	383
Operating Phimosis without Circumcision	383
—	
Book Review	384
—	
Reading Notice	384

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CANADA MEDICAL RECORD

AUGUST, 1903.

Original Communications.

BRONCHITIS AND ALLIED DISORDERS.

By W. E. FAIRFIELD, C.M., M.D., Green Bay, Wisconsin.

In this short paper, it is my intent to take a fairly comprehensive view of the affections which might properly be classed under the heading "Bronchitis and Allied Disorders," and yet not to single out any one class, and cover that one exhaustively. As the study of pathology has altered our ideas relative to many diseases, as for instance it has taught us to differentiate between different infections, dropsies and Brights, by classifying them according to their *causes*. So we are taking a more comprehensive view of bronchitis, and to-day the term no longer means an inflammation of the bronchial tubules or tubes, but the nomenclature also, more often carries with it a knowledge as to the causation, and so we are learning to speak of asthmatic bronchitis, typhoid bronchitis, diphtheritic, tracheo-bronchitis, etc. This is surely a very desirable change, not only from the fact that it is more scientific and exact, but also for the reason that when once a diagnosis is made, a rational system of treatment more readily presents itself. It is obvious to the layman and physician alike that the treatment and prognosis in a case of bronchitis due to atmospheric changes, and in one due to diphtheritic infection, must be vastly different.

While bronchitis, uncomplicated, cannot be said to be a dangerously malignant disease, yet it is so widespread in its distribution and so insidious in the production of lesions, which later may become sources of the gravest forms of disease, that we may reasonably give it more than the passing attention too often bestowed upon it; for surely no disease is more open to the saying that "familiarity has bred contempt." The process of inflammation, extending as it usually does from above downward, and involving the capillary bronchioles, is finally attended with the throwing out of a muco-purulent secretion, more or less tenacious, and which, in the finer bronchial subdivisions, completely cuts off the distal endings of these organs, thus leading to areas of collapse, extension of the infective process to the lung tissue itself and to absorption of the products of such infection. It is easy to assume that such a region must become a point of least resistance, and hence a happy locus for the propagation of tubercle or other pathologic products. Since the treatment of this trouble is largely preventive, since probably the greater portion of such cases could be avoided by proper attention to ventilation, clothing, diet and excretion. Since the extension of such a minor trouble as an acute coryza may lead to a bronchitis, or broncho-pneumonia, with all of its attendant dangers, it is readily seen that there should be no trifling with this trouble, or with the source of it, but that each case should be met in the face and knowledge of the fact that the present condition of the patient is not so much a matter of concern as is his future. It is unnecessary that I should go further into the subject of causation, for it is well understood that while the disease is probably more often microbic than otherwise, yet anything that can produce an irritation and consequent inflammation of the bronchial mucous membrane can also act as a causative factor.

British statistics, which are usually pretty reliable, give a death rate of 1,350 per year from this disease for each million inhabitants. Over one-third of this number are under 3 years of age, and nearly $\frac{2}{3}$ are over 45, leaving but a

very small number for the intervening period. Statistics can, as you know, convey inferences that are entirely misleading, and to illustrate this matter, I will only remind you of the fact that Mark Twain made the discovery that 95 p.c. of all deaths occurred in bed, and argued from that fact that people should sleep standing up.

Now it is probably true of bronchitis that, in the acute form, it is more frequently found between the ages of 3 and 45 than at either approach to these years, but that ordinary uncomplicated acute bronchitis receives very little attention; in fact, is regarded as little more than a severe cold. The idea that simple uncomplicated bronchitis can carry off 1,350 persons per year for each million inhabitants is to me preposterous.

Bronchitis is limited to the area bounded by the bifurcation of the trachea above and extending downward to the air cells of the lungs. It is a superficial inflammatory process. Drainage, while not ideal, is at least fairly free. The air cells continue to functionate in a normal manner, and it is inconceivable that the death rate should be so alarmingly high. Bronchitis, uncomplicated, is a rarely fatal disease in my experience. It causes considerable distress in its early stages, some rise of temperature, a dry cough, becoming loose as exudation takes place, followed by a more or less rapid recession according to the resistance of the individual and the surroundings. The tendency to extension of inflammatory action is, however, always active, and is, I believe, the great danger to be feared in this disease. The occlusion of a small bronchiole or the extension of infection to the air cells themselves will (in all cases who do not rapidly recover) produce a lobular pneumonia, more or less difficult of diagnosis, but present nevertheless. In the very young and in the old, this tendency is opposed but feebly, and a septic condition, marked by a weak and irregular pulse, quickened respiration, variable temperature, sweats, etc., lead either to death or to a slow convalescence. These are not cases of bronchitis; they are pneumonic; and, though the original diagnosis

was "bronchitis," the final one should be "broncho-pneumonia." Bearing this great tendency in mind, it is well to foreshadow the probability of such occurrence in your original prognostic opinion. In many cases it is to me impossible to map out small pneumonic areas—the crying and fretful child; breathing in a shallow manner, to protect himself from pain, is not likely to breathe deeply for diagnostic purposes—and the aged and feeble, with almost immovable chest walls, offer difficulties almost as great. Fortunately, we have the other symptoms to guide us. The point I would like to make is, that while it is possible to have deaths from uncomplicated bronchitis, while it is possible that such cases may continue to exist for weeks, exhibiting all of the characteristic symptoms, yet my limited experience leads me to the conclusion that such cases are extremely rare, and that bronchitis of non-specific origin is a disease characterized more by discomfort than danger. I am convinced that, could we make a *post mortem* in each case where the death certificate reads "bronchitis," we would find lesions far graver in their character and in their bearing upon the life of the patient than are found in the particular area to which this disease is limited.

Though somewhat out of the natural order, I would like to here call your attention to what I believe to be the most common cause of uncomplicated and even of complicated bronchitis. This is bad ventilation. Crowded halls and schools are fruitful sources of this trouble, for they are rarely provided with adequate ventilation. Particularly is this applicable to those who habitually live in well ventilated apartments. Persistent habitation in foul air seems to beget immunity to a great extent.

Another great cause of inflammation of mucous surfaces is the retention within the system of the products of tissue change. Elimination in a state of perfection means resistance at high tide. Aside from these, sudden changes in temperature, particularly if accompanied by high winds, are strongly operative in its production. The eruptive fevers are often

accompanied by bronchitis, and it is well to bear this in mind in giving a prognosis in typhoid.

As to treatment, I presume that I will meet with considerable criticism when I state that I have no faith in so called expectorants. I very rarely use ammonia, ipecac, opium, antimony, veratrum viride, squills, sanguinaria, morphia, etc. Some of these, by exciting nausea, will tend to excite the activity of the salivary and possibly of the bronchial glands. I have always thought that there was already sufficient activity in that region.

Where the engorgement is severe and pneumonia is threatened, venesection will quickly give relief. Mild counter-irritation applied to the chest, both front and back, will be found useful. A mixture of an ounce of oil of wintergreen with 3 ounces of alcohol, both counter-irritates and has an agreeable odour. The chest may be protected with cotton batting. A brisk laxative is always indicated—preferably of the saline variety. The skin should be made active, by the giving of a hot foot-bath and the drinking of an abundance of cold water. As water is also our best diuretic, it is also useful for that reason. As the patient is greatly relieved by the reduction of the temperature, if there are no contra-indications, I always give a few grains of acetanilide with some caffeine citrate—to an adult 5 and 1 grain respectively, and to children and the aged in proportion. Inhalations are useful in the early stages. Compound tincture benzoin 3i. in a pint of boiling water, from which inhale the steam. For the securing of rest to the inflamed tissues, I give codein. To the adult, $\frac{1}{4}$ grain every 2, 3 or 4 hours. It modifies the tearing, exasperating cough, which cannot relieve so long as there is nothing to expectorate. Where the accumulation takes place, as it will in 2 to 4 days, the cough will come on only when there is something to expectorate. It is wise to limit peritoneal movement in localized peritonitis; it is, for the same reason, wise to give the inflamed bronchial mucous membrane all the rest obtainable.

Ordinary cough mixtures interfere with digestion. I

don't use them. Give a stimulant instead of a depressant in the early stages, and later give a tonic if it is indicated. In any case, provide the patient with an abundance of pure air, heated to an even temperature. I lay more stress upon its evenness than upon its degree, for, after all, *that* is the important point.

The rheumatic form should be treated with the usual rheumatic remedies, and the diphtheritic will yield to the use of antitoxin.

The chronic forms of bronchitis are best treated by sending the patient to a point where he can spend the greater part of his time in the open air, and the same statement also applies to the tubercular.

Selected Articles.

COUGH IN PULMONARY PHTHISIS.

By J. LEFFINGWELL HATCH, B.Sc., M.D., F.R.M.S., London.

As broods silence back of sound, so also stands designer back of design, and the logical mind of man has ever thus traced a presumptive relation between the thing observed and its supposed origin, and called them respectively cause and effect.

Thus in medicine we look from symptoms to a cause, and if post-mortem we find a definite lesion we too often jump to the conclusion that it must be the very thing we are looking for, and are apt to forget that back of this change of structure lingers the first real cause in perverted physiologic function.

One of the best known and oldest symptoms, and one which occurs from diverse causes, is cough, and this, another, almost as common and well known, dyspnoea, go hand in hand among the various affections of the respiratory organs.

In pulmonary phthisis cough is usually the first symptom manifest and lasts throughout the disease, but the cause is not the same in each stage, and consequently requires careful study and varying treatment in the different stages.

The earliest physiologic alteration is a hyperemia usually

occurring at the apices. This congestion of the capillaries is the causal irritation that brings about the cough reflexly through the medium of the nervous system. Here a nerve depressant and vaso-motor dilator is indicated rather than an analgesic and expectorant.

In the next stage of consolidation the hepatized tissue acts as a foreign body and likewise reflexly brings about a useless cough in the vain effort to get rid of itself. In this stage resolution should be established by means of an alterative and the nerves quieted by a sedative.

In the third stage where tissue has undergone cheesy degeneration and broken down, it really is a foreign body that causes the cough, which can only be relieved by its removal, hence we give stimulating expectorants in combination with sedatives and analgesics to relieve the nervous spasms and consequent pain.

The sum total of the forces of a consumptive is at the most a low figure, and we try to keep this up by a high diet that often deranges other organs, whereas regard to the conservation of force by lessening the cough will give the same result without detriment to other emunctories.

To allay cough, then, has been the aim of therapeutists from time immemorial, and of the different concoctions and mixtures that have been vaunted and foisted upon long-suffering humanity their name is legion.

Probably the greatest boon that ever came to us in the form of medicine was opium, and some form or other of this drug has been and always will be used to a great extent as an ingredient in every cough mixture.

Of the Alkaloids of opium, morphia has probably been the most popular until recent years, when codein has claimed considerable attention and threatened to usurp its place; but since the discovery of heroin, by Prof. H. Dresser, of Elberfeld, Germany, in 1898, this has been made impossible, and the new analgesic after careful study both in Europe and America has found great favour among practitioners, especially in diseases of the respiratory organs.

In the fall of 1900 my attention was called to Glyco-Heroin (Smith), and I tried a sample bottle on a patient with such gratifying results that I determined to make further observations.

What these results were, the clinical record below tells more graphically than worded phrases of description could hope to do.

It does not nauseate, and can be given in teaspoonful doses as often as every two hours to adults, dose of course being graduated in children according to the age, although they tolerate heroin where opium would produce untoward results.

The greatest advantage this preparation has over all others lies in the fact that it does not contain anything that deranges the stomach, and can be given indefinitely without the patient turning against it.

The majority of cough mixtures contain sugar, which is bound to undergo more or less fermentation, opium, which constipates and affects respiration, and belladonna, which checks the secretions, so that if they are able to lull the patient into oblivion of his condition for a few hours on account of the large amount of narcotic they contain, he awakes to find a stagnation of secretions with renewed paroxysms of coughing, and "pushing the mustard to fanaticism;" for further relief he eventually becomes a slave to opium.

I have used Glyco-Heroin (Smith) now in over fifty cases, with the unvarying result that it relieved the cough, reduced the temperature, increased the volume of respiration, and allayed the night sweats, while at the same time it did not derange the stomach or cause constipation, did not produce vertigo nor nausea, never weakened the respirations, nor caused deleterious effects upon the heart, so that I can frankly say that without doubt we have in this compound the ideal cough mixture for the cough of phthisis pulmonalis.

The cases that I here quote I have selected from a series of fifty-three, with the idea of not citing cases so near alike as to produce monotonous repetition, no matter how gratifying the results.

As has been well said of this preparation, it is not only a true pharmaceutical product, but an ethical one as well, and one that the physician can use understandingly, as its composition and physiologic action are well known.

Unfortunately, all good things are sooner or later imitated, and something put forward as just as good but cheaper, and Glyco-Heroin (Smith) is no exception to this rule, so if results are not satisfactory, substitution must be at the bottom of it.

OBSERVATION ONE.

Mrs. Marie B., aged 32, father living in good health, mother died several years ago, does not know cause of death.

She was thin, and her complexion was of a muddy yellow colour when first examined. Weight 122½ pounds; pulse, 100; temperature, 100°F. Respirations, 36 and difficult.

She had a fairly good appetite, but was constipated. She menstruates regularly, but has coughed and expectorated for two or three years. Sputum analyzed showed the presence of tubercle bacilli. She had a pleurisy eight years ago, the result of a cold; both lungs were affected since then, crepitant rales throughout, and areas of congestion here and there.

Her sputum had been tinged with blood, but she has never had any hemorrhages.

I gave her an emulsion of cod liver oil, and Glyco-Heroin (Smith) in teaspoonful doses every two hours. The cough was relieved from the first, and after four months had entirely disappeared. The lungs cleared up, no more rales or areas of congestion, and she gained ten pounds in weight.

OBSERVATION TWO.

Miss E. M., aged 32, unmarried. Had been ill six months before coming to me for treatment, and a diagnosis of tubercular laryngitis had been already established by some one else.

There was dullness on percussion over nearly the entire area of both upper lobes of the lungs, she had night sweats, fever, and a persistent cough, raising considerable. She was pale and emaciated, highly excitable and nervous; pulse 110, temperature, 102° F., respirations 26.

Microscopic examination of the sputum revealed the presence of the tubercle bacilli.

On laryngoscopy I found an extensive ulcerative process on the posterior wall of the larynx just above the vocal cords, and both epiglottidian folds were congested and swollen.

Besides the local treatment for her throat trouble and constitutional care I gave her Glyco-Heroin (Smith), one teaspoonful to be taken every two hours.

There was marked improvement after the first twenty-four hours, and she said she had slept well through the

night, had coughed scarcely at all, freedom from which distressing symptom she had not enjoyed for months.

The temperature gradually went down to normal, the night sweats ceased, and in little over one month's time the cough had left her entirely. The ulcer in the larynx was finally healed, which relieved her hitherto painful deglutition; besides this she gained flesh and strength, due, undoubtedly, to the conservation of force which the mitigation of the cough afforded.

OBSERVATION THREE.

Mrs. I. T., aged 35, had one sister who was tuberculous. She had been ill for over ten years when she came to me; previous to her bad feelings she had been operated on for prolapsis uteri; about five years ago first noticed that her abdomen was increasing in size. This proved to be due to a fibroid tumour which grew to such an extent that her abdomen measured thirty-seven inches in circumference. She had coughed for about six years, but her aspect was fairly good; she weighed 137 pounds, but was nervous and impressionable: respirations were 20, pulse 83, temperature 101.1°F.

Physical examination revealed numerous moist rales on the right side, and her sputum on microscopic examination showed the tubercle bacilli.

She was given Glyco-Heroin (Smith) in conjunction with constitutional treatment, and received local electrical treatment from the hands of a specialist. At the end of eight months her abdominal measurement was reduced to thirty-three inches, cough and expectoration had entirely disappeared, as well as the moist rales, and her temperature, pulse, and respiration became normal.

Whether her cough was entirely due to the lung trouble, or was partially due to the uterine difficulty, I was unable to determine, but granting both factors as a cause Glyco-Heroin (Smith) cured it.

LABORATORY DIAGNOSIS—ITS RELATION TO THE GENERAL PRACTITIONER.

In these days of progressive medicine, when the empirical is being supplanted by methods scientific, and when the dogmatic is rapidly disappearing in the light of rational investigation, the modern practitioner is beginning

to realize the dawn of a purely scientific era in the realm of medicine and surgery. It therefore behooves him as the curator of public health to awaken to the use of practical laboratory methods which have come into general use only within the last decade, and to arm himself with these, the most accurate and rational means of diagnosis.

Scarcely more than ten years ago clinical laboratories were unknown, and to Dock, of Ann Arbor, is due the credit for the establishment of the first clinical laboratory of medicine in this country. His work was immediately followed up by Osler and others until now there is in every well-equipped hospital, and in the offices of many general practitioners, a more or less complete equipment for the handling of blood, urine, sputum and stomach contents, together with the diagnosis of pathological specimens. The purpose of this article is to point out the absolute advantage and necessity of employing laboratory methods of diagnosis, and the ease with which, by careful manipulation and study, they may be made practical in the hands of even an untrained member of the profession.

It is an astonishing fact that the microscope is a stranger in the offices of the great majority of physicians to-day. Their excuse is twofold: First, the greater part of them were schooled before modern laboratory technic was known, and, second, the demands of an extensive practice make it impossible to devote any time to these finer and more accurate methods of diagnosis. Here is the mistake, and many of the men of twenty years ago realized it and are as well versed in clinical diagnostic methods as are the more modern product of the laboratory of to-day. Indeed, the general public are demanding more of scientific accuracy from the physician, and the time has come when the bottles of nitric acid and Fehling's solution must be considerably supplemented to meet the demands of even the lay mind.

The possibility of laboratory diagnosis in the hands of the general practitioner predicates a microscope and a small expenditure for apparatus and re-agents. The technic and tests may be obtained from various excellent hand-books on clinical diagnosis, and the success depends largely upon care and skill in manipulation and an absolutely unprejudiced mind in the judgment of results. The realm of hematology offers a very fertile and important field to the general practitioner, to say nothing of those in the specialties of medicine and surgery. By means of the one point of a stub pen, a quick and reliable hemoglobin estimate may be made within a minute, and com-

parative work with the Fleischl hemometer has satisfactorily demonstrated that the results by the Tallquist chart are sufficiently accurate for ordinary clinical purposes. From the fresh drop and the oil immersion the malarial parasite may be promptly recognized without referring to the stained specimen. The Widal reaction, which is the nearest to an absolute diagnostic measure that we have in typhoid fever, can be made in a short time when a fresh typhoid culture is on hand. By the examination of spreads in stained specimens, a diagnosis of the varied leukemias and anemias is possible. The Thoma-Zeiss apparatus makes it possible to count both the number of red and white cells, thus determining more in detail the severity and nature of the leukemias and anemias.

The leucocyte count may serve as a valuable differential measure in separating measles and typhoid fever from the other acute infections. The presence or absence of leucocytosis has great surgical importance as an earnest of possible perforation in typhoid, in various pus infections and in carcinoma. The importance of the leucocyte count and its interpretation is one of the most interesting fields in diagnostic medicine.

Besides the qualitative and quantitative estimation of sugar and albumin in the urine, a determination of the output of urea is easily and reliably made by the Doremus apparatus. This test is of value in estimating the nitrogenous excretion and the state of the metabolism, especially in the cachexias and wasting diseases. The tests for acetone and diacetic acids are important in cases of diabetes, suggestive of impending coma.

The Diazo reaction, although not absolute, is a valuable confirmatory element in the differential diagnosis of typhoid.

The presence of bile can be quickly detected when present in large quantities by the characteristic foam, and in smaller amounts by the nitric acid test, or the green ring with tr. of iodine. The importance of routine examination of the sediment cannot be too strongly emphasized, for crystalline elements, pus, blood and casts. Pus may be detected in the centrifugated sediment microscopically or by the addition of iodine, which yields the glycogen colour reaction. The red blood cells may be recognized microscopically or in traces by the Hemin crystal test. The differential diagnosis between the various forms of parenchymatous and interstitial nephritis rests very largely upon a careful examination of the size and kind of casts.

In this connection it may be well to speak, also, of tuberculous conditions of the genito-urinary tract and their recognition by staining the dried sediment with carbolic fuchsin and Gabbet's solution. In obscure urethral disorders it is often necessary to make stains of the discharge and determine the presence or absence of the gonococcus.

The necessity of a careful examination of sputum—both macroscopical and microscopical—is generally recognized, yet only occasionally is the practitioner prepared to make these examinations for himself. The search for the tubercle bacillus and the pneumococcus by methods should be routine measures. Elastic tissue may be detected after boiling the sputum with sodium hydrate and centrifugating, or more quickly and equally satisfactorily by placing sputum on a piece of ordinary window glass and, after locating suspicious caseous particles macroscopically, press down upon them with an ordinary glass slide and examine under the low power. With a little practice, elastic tissue may be quickly detected by this method.

There should be a routine examination of the stools in gastro-intestinal disturbances, especially for blood, pus, large quantities of mucus, pieces of intestinal membrane, tubercle bacilli and the various forms of intestinal parasites and worms. This is a line of investigation which is naturally superficially carried out in most cases, and, indeed, for that reason alone, the diagnosis is often completely missed. Suspected gall-stones should lead to a thorough washing of the stools through a rather fine sieve, and a minute examination of the remaining debris.

Perhaps in no realm of clinical medicine has there been more satisfactory results than in the examination of gastric contents, both for diagnosis and rational treatment. In the hurry of diagnosis the ordinary practitioner prescribes first an alkali, and if that does not relieve, an acid and pepsin is substituted. Consequently, there are to-day a vast army of stomach cases irrationally and unsatisfactorily treated. The use of lavage by means of the stomach tube, the employment of test meals and their chemical examination for total acidity, free hydrochloric acid, the presence or absence of pepsin, rennet and lactic acid, furnish valuable information, both as to diagnosis and treatment. It is also important to make microscopical examinations for the presence of fragments of mucous membrane, pus, blood, fungi and bacteria, as, for instance, the Oppler-Boas bacillus. The determination of gastric motility is made by numerous methods, perhaps none more

satisfactory than the administration of salol, and its detection in the urine within certain time limits, as salicyluric acid.

Another quite distinct mine of laboratory procedure, requiring quite another set of apparatus and a distinct training can, however, be carried on very profitably by the practitioner, and that is the diagnosis of pathological specimens. The debris resulting from a uterine curettage may reveal an extremely granular development, or perhaps adenoma verging on to carcinoma. An early recognition may thus be the salvation of a patient from later carcinoma. Lymph glands, easily removed, suggestive of tuberculosis, gumma, sarcoma or carcinoma may easily be examined and the definite pathologic process determined. Methods employing celloidin, or even paraffin, require but little apparatus, and the return is, indeed, manifold.

In concluding, it must be clearly understood that the above is, in no way, intended as a complete résumé of the means of laboratory diagnosis which are at the bid of the skilled clinical diagnostician. They are simply suggestive of certain lines of work which may and should be more generally prosecuted by the general practitioners of medicine throughout the country. It is by these methods that medicine shall be kept from the ignominy of disrepute and charlatanism, and held upon a solid foundation, with scientific methods at its base and a superstructure of conservative and rational judgment.—Raymond Wallace, M.S., M.D., in *Interstate Med. Jour.*

IRON IN THERAPEUTICS.

Nothing in the whole history of therapeutics is more interesting or more instructive than the vicissitudes of the theories on which iron has been administered at various times. For almost as long as the memory of man runneth it has been recognized that the exhibition of iron in certain forms was useful in the treatment of anaemic conditions. Originally this was considered to be due to the fact that iron by its very nature gave strength, and that somehow the substance of the metal was transmuted into vigour for the affected individual. When, long ago, the countryman dissolved shingle nails or some other form of iron in vinegar, or made what the Germans call *Rostcasser*, by allowing iron to obtain in water, and gave the draught to his anaemic daughters, it was with no idea that the acetate of iron or oxide of iron might in some way affect the chemism of the body, but that the physical

qualities of the metal somehow were absorbed and transformed into health-giving, bracing properties for the patient.

When it was discovered that the principal element in the colouring matter of the blood, haemoglobin, was an iron compound, and that the transference of oxygen from the outer air to the tissues was accomplished mainly by means of the unstable compounds that oxygen forms with this iron-containing substance, then it was concluded at once, and apparently on good grounds, that the reason why iron was useful in anemia was that the iron compound administered by the mouth was absorbed directly as food would be from the intestines and helped to make up for the deficiency of iron which exists in anaemic blood. For a considerable time this theory held its ground, and a definite advance in scientific medicine seemed to have been made, beyond which it would be unnecessary to seek for further reasons. The basis of iron therapy, in a word, appeared to be settled for all time.

The advances in physiological chemistry, however, showed that meat and most of the vegetables which men consume contain an abundance of organic iron, certainly much more than would be necessary to supply the place of the comparatively small amount of iron whose absence from the blood is the index of the anaemia and the condition on which, apparently, the weakness is dependent. Besides, Sir Andrew Clarke had insisted very much that in addition to iron therapy, the most important element in the treatment of anaemic conditions was to put an end to the absorption of toxic materials from the intestines by preventing constipation. Evidently the condition of the bowel had something to do with the presence of anaemia, especially in young people, and accordingly the theory of iron therapy was modified, and it was said that the iron ingested was not directly absorbed, but served to prevent the formation of certain toxic compounds, especially substances related to hydrogen sulphide, which occurred in the intestines during periods of constipation. There are those who still consider that this is the main reason why iron acts favourably in anaemic cases.

In the meantime a number of observers in various countries have been finding some very interesting details of therapeutics as regards various metallic substances more or less closely related to one another. It was shown, for instance, by German and French observers, that manganese exerted something of the same influence as iron when administered in corresponding doses to anaemic

patients, and that this substance made a useful adjunct to iron in such cases. As manganese has normally no place in the tissues at all, this came as a distinct surprise to the holders, particularly of the original theory of iron therapy. Other observers showed that almost any of the so-called heavy metals would prove as effectual as iron for the treatment and relief of anaemic conditions. Sir Willam Broadbent, over a year ago, in his article in the *von Leyden Festschrift* stated that copper, cobalt, or nickel might be used in small doses to replace iron in the therapy of anaemia with excellent results. Employed in dispensary cases with reasonable care as regards diet and exercise, any of these metals gave the tonic stimulus that was supposed to be the specific effect of iron a few years ago, and some of them even succeeded in cases in which iron had apparently failed. Here, in America, it has been shown by Taylor, some years before, that mercury in small doses might act well as a tonic, and that if carefully administered it would cause an increase rather than a decrease in the number of red blood-corpuscles and in the haemoglobin value of their contents. This was a startling addition to our clinical knowledge of the so-called iron therapy. We were really in the presence of a metallo-therapy.

It has taken a long while for pathologists to learn anything definite about the pathology of the red blood-corpuscles. The white blood-corpuscle has been described as existing in a number of pathological conditions, while the most plentiful red cells have been less fruitful fields for discovery. Recently it has been found that there is a characteristic degeneration of the red blood-corpuscles that take place as the result of certain toxemias. This degeneration occurs typically very early in lead and arsenic and other metallic poisoning. Curiously enough, however, a corresponding degeneration has been found to occur in connection with the administration of an excess of iron. This accounts for the unpleasant results that follow the administration of iron in plethoric conditions better than any previous etiological suggestion. It would seem, then, that iron acts as a stimulus to the vitality of the red blood-corpuscles, and that this stimulus may easily be too great and set up degenerative processes.

The whole subject of iron therapy is a lesson in the attitude of mind that a physician should assume with regard to therapeutic questions. While there has been no doubt that clinically iron was beneficial in anaemic conditions, the various theories to account for it have up to

date all been without substantiation, and our use of it has depended largely on empirical reasons. Empirical advances in therapeutics, then, the practitioner must be ready to accept, even though the reason for them is not always evident. On the other hand, pretty theories must not be allowed to play too important a role in persuading the practitioner as to the possible good that may result from the administration of drugs whose benefit may be due to entirely different reasons from those alleged. In a word, the mental attitude must be one of ready receptivity and yet of thorough-going conservatism. Editorial (*Medical News*, April 25, 1903.)

Progress of Medical Science.

MEDICINE AND NEUROLOGY.

IN CHARGE OF

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DISCOVERY OF THE GERM OF SMALLPOX.

(From a special dispatch to Journal A. M. A., May 2, 1903.)

In the presence of more than five hundred prominent members of the medical profession, in an amphitheatre of Harvard Medical School, Prof. W. T. Councilman made his announcement of the discovery of the germ of smallpox. He stated that for two years Drs. Brinkerhoff, McGrath, Lyzzer and Thompson had, under his supervision, carried on the study in the laboratories at the smallpox hospital at Galloupe's Island and at the Detention Hospital on Southampton street, with the co-operation of the Boston Board of Health.

The material was all brought to the Harvard Medical School and studied there. They first studied vaccinia, then the contents of vesicles and pustules. They could not find any definite germs in these, because of the great number of bacteria of various kinds which were always present. The organism of the disease was at last revealed with its cycles of development by making an anatomic

study of the lesions of the disease. In the deep epithelial layers of the skin the organism was found, which consists of small bodies one micron in diameter, and have been noted by other observers. They are homogeneous, increase in size, become granular in structure gradually, irregular in shape, and surrounded by little circles more or less like amabae. They stain easily. Now and then segmentation is seen, the organism splitting into a number of segments.

This is a distinct cycle. There is no change in the nuclei; a vacuole surrounds the organism and grows with it. It suddenly disappears and peculiar changes are noted in the nuclei; a ring appears and grows; rings appear in its periphery and its structure becomes spongelike. This finally fills the whole nucleus, which degenerates and sets free the body. It does not increase much more in size, but the structures become more complex; the ring-like bodies appear, one micron in diameter, and break up into these "spores." There is thus, as in other protozoa, two cycles, the intracellular and the intranuclear, the latter being the more complex, and corresponds to sexual development.

In vaccinia there is only the first cycle, and this is the case when rabbits are exposed to smallpox. The monkey being nearer to man, gives both cycles. The whole process is complete when the vesicles begin to form. These stages are not found in the vesicles, pustules or crusts, but the "spores" have been found in the blood vessels of the skin. These are probably not the only cause of the later eruption but prepare the way for the streptococci. Prof. Councilman showed a beautiful series of lantern slides made from micro-photographs, which fully and clearly established each of his statements. Prof. Calkins, professor of zoology at Columbia University, was present and agreed with Prof. Councilman in believing the organism a protozoan. He warmly congratulated Prof. Councilman and his associates for their investigations and discoveries and specially noted the advantages of the discoveries in aiding the early diagnosis of the disease. If the organism can be found in the epithelial cells or the blood instead of having to wait fourteen days for the eruption to appear, valuable time would be saved and the possibilities regarding treatment are evident. The organism belongs to the class of microsporidia.

MESOTAN, THE EXTERNAL ANTI-RHEUMATIC.

By Dr. J. RUHEMANN.

The idea of treating internal diseases by utilizing the skin as an absorbing surface, as carried out successfully for many years in the cure of syphilis, has led to experiments to render salicylic acid, owing to its rapid absorption by the skin, serviceable for therapeutic purposes by this method. For this purpose a methyl-oxy-methylester of salicylic acid, named mesotan, containing 71 per cent. of salicylic acid, has been introduced. Although mesotan has not an unpleasant odour to most persons, it is advisable in the case of fastidious patients to add a few drops of lavender oil, the addition of 5 drops to a mixture of 6 drachms each of mesotan and olive oil being sufficient.

There can be no question as to the curative influence of the remedy upon rheumatic pains and swellings, but it is necessary to apply at least one and one-half teaspoonfuls of the mixture at a time. Although it has been advised that the affected parts be gently rubbed with the mixture, I believe that this should be done more energetically, according to the degree of sensitiveness present; and in chronic cases very vigorously, in order that as little of the drug as possible be lost to hasten its absorption, and finally on account of the value of conjoint massage in chronic rheumatism. Mesotan in the pure state produces a distinct cutaneous irritation, which is not completely lacking in the mixtures, the latter producing redness of the skin and a feeling of warmth. This stimulating revulsant effect is very desirable in the relief of rheumatic pains; thus in the acute forms of rheumatism, in which prompt relief is desired, where any movement of the affected joint is scarcely possible, where every breath is painful, owing to the involvement of the chest muscles, and where injections of morphine are ordinarily resorted to, I have employed mesotan in the pure state with success. This cutaneous irritation is of no account in acute rheumatic conditions which run their course in a few days, but must be considered in cases in which pure mesotan must be applied for more than three or four days. Here eczematous eruptions may arise, and they may also occur if the mesotan mixture is applied three times daily to the same place for 10 to 14 days. Thus, for instance, an itching inflammatory condition of the skin of the knee occurred in a robust

postman and a dermatitis on the back of a woman after nine days' use of mesotan.

In order that the remedy may not be discredited, it is therefore advisable to apply it successively to different areas, especially to those affected, and with sufficient force to facilitate its absorption, in the same way as in the inunction treatment of syphilis. As a protective, ordinary cotton should be used, and not absorbent cotton, because the latter takes up too much of the oil.

Porous plasters and rubber plasters containing a drachm or more of mesotan are useful; they are very efficient in the treatment of lumbago and localized muscular rheumatism. In the rheumatic form of iritis the application of such a plaster to the forehead in the place of a mercurial ointment is to be recommended. Of course, the application of mesotan in this affection yields excellent results.

Even after the protracted use of mesotan no disturbances of the appetite, or headache and tinnitus have occurred. Thus, for instance, 10 ounces of the mesotan mixture, containing nearly 6 ounces of salicylic acid, were employed continuously in one case for 5 weeks. Indeed, under the excessive use of the mixture, none of the toxic effects of salicylic acid, as upon the heart, manifested themselves. This was shown in a case of acute rheumatism following quinsy, in which, during 48 hours, two and one-half ounces of the mesotan mixture were rubbed in vigorously and prevented from escaping by careful bandaging. I would mention that without any internal medication the severe pains affecting the shoulder, elbow, wrist and knee-joints had completely disappeared at the end of 48 hours. In the urine passed at the end of that time I found an abundance of salicylic acid, as shown by the chloride of iron test, and this also happened in other cases after comparatively small doses. In fact it is possible within a short time to saturate the organism with salicylic acid, this circumstance being of practical importance in a number of infectious diseases, as in the treatment to certain affections of the bladder and kidneys.

Owing to the fact that mesotan exerts no action upon true neuralgias, it may be used for the purpose of differential diagnosis as to whether a given pain is of rheumatic or gouty origin or of another nature.

The following formula is convenient:

Mesotan..... 6 drachms.

Olive oil..... 6 drachms.

Oil of lavender..... 5 drops

Apply three times daily, 1 to 1½ teaspoonsful.

In regard to the action of the remedy in various forms of muscular rheumatism of acute and chronic character, in acute articular rheumatism, and chronic rheumatism, and gout, my experience coincides with that of Floret. I would only add that intense cutaneous irritation should be avoided in the manner described above. To obtain the best result it is advisable to employ, in connection with the external use of Mesotan, small doses of aspirin about 25 grains daily, or in subacute and chronic processes to alternate between the two.

In rheumatic conditions with severe pain a single hypodermic of morphine is often indispensable, or, what I have found most efficient and safe, 1 to 2 grains of iodide of sodium in a 5 per cent. solution, in connection with the external application of pure mesotan or in mixture. In chronic rheumatism in which mesotan only removes the exacerbations, the injections of iodide of sodium may be continued during the intervals between the attacks. I would mention here that if the solution of iodide be warm any pain is avoided during the injection. The alternating combination of such remedies with baths and various measures of exciting artificial diuresis affords us an extensive armamentarium in combating acute and chronic rheumatism, among which mesotan deserves the prominent place.

Without entering into the details of my observations, amounting to about 100, I would call attention to the following interesting effects of the mesotan mixture, which did not seem to me accidental, namely, the rapid disappearance of facial erysipelas under the local use of mesotan applications. The case was that of a vigorous man in whom the disease was severe, affecting the nose and cheeks. As soon as mesotan was applied its beneficial influence became manifested, the extension of the disease being prevented, and a cure occurring in a short time. In a case of bronchiectasis, in which profuse putrid sputum was evacuated, the offensive odour of the expectoration vanished after a few inunctions of mesotan.—*Deutsche Medicinische Wochenschrift*, No. 1, 1903.

ARSENIC IN THE TREATMENT OF CHOREA.

F. M. Pope recommends the following principles of administration:

See that the tongue is clear before commencing treatment, and, if not, give a mild mercurial purge and a stomachic mixture for 48 hours.

Put the patient on a bland and easily digested diet. For children this will naturally consist principally of milk food, but in adults it need not do so.

Give the drug in a much diluted form, and in the same dilution throughout. Pope usually gives $\frac{1}{2}$ minims of the liquor arsenicalis B. P. in 1 oz. of water as the first dose to a young child, and when increasing the dose give a larger quantity of the same mixture instead of increasing its strength; for example, a child of 5 years would have 1 oz. three times on the first day, 2 oz. as frequently on the second, 4 oz. on the fourth, and so on as long as no unpleasant symptoms manifest themselves. The stomach is much more tolerant of the drug under these conditions. The smaller and earlier doses are usually given after meals, the larger ones taken during meals. There is no difficulty in getting even a young child to take 6, or even 8 oz. of fluid. In adults the treatment may be commenced by giving 2, or even 3 oz. of the mixture thrice daily as a dose. This is equivalent for children to an initial dose and daily increase of 0.025 gr. or 0.0018 gram of arsenious anhydrid thrice daily, the dilution being about 1-40,000 or 0.002 per cent.

Do not discontinue on the first attack of vomiting. This is often due to accidental causes, and the patient may be able to go on for two or three days without a recurrence.

Increase the dose daily. A daily increase of $2\frac{1}{2}$ minims to each dose is usually well borne.

Keep the patient in bed throughout the treatment.

If the vomiting persists, discontinue the drug for 24 hours, and then give the same dose as the last.

Examine the patient very carefully daily for any sign of toxic action.

What must be aimed at is a form of shock action on the nerve tissues. The problem is, how to get the greatest immediate action with the least risk of doing permanent injury; and this appears to explain why long-continued treatment with small doses fails, while short treatment with large doses succeeds. Apart from the fact that the nervous substance gets used to the repeated small doses, a simple calculation shows that one may actually administer a much greater total amount by the former method than by the latter. A dose of 5 minims three times a day for a month amounts to a total of 450 minims or $4\frac{1}{2}$ grains of arsenious anhydrid, while under this plan, in eight days the patient would receive 270 minims,

or not much more than $2\frac{1}{2}$ grs. With a cumulative poison such as arsenic, this is no small gain.

Patients treated in this way usually show much improvement in the course of three or four days. The movements are more easily controlled, and if they have not entirely disappeared in seven or eight days the disease will almost always have become a trifling one, the patient being able to feed himself, take ordinary diet, and may be allowed to get up and take outdoor exercise. In some cases a return of the movements may take place, when the patient should be put back to bed, and the treatment resumed, commencing with 3 or 4 oz. of the mixture. On discontinuing the arsenic, Pope usually gives a mixture containing iron for a few days.—*Brit. Med. Jour.*

TREATMENT OF TUBERCULOUS GLANDS OF THE NECK.

Freeman (*Journal American Medical Association*, 1902, December 6) discusses the treatment of tuberculous glands of the neck. After discussing briefly the usual history of the disease and the medicinal and hygienic methods of treatment, he devotes the larger portion of his article to a consideration of local treatment, discussing first the non-operative, then the operative. The conclusions which he arrives at are as follows:

1. The gravity of tuberculosis of the cervical lymphatics both as regards local deformity and remote secondary manifestations, is generally underestimated.
2. General treatment, especially hygiene, is of the utmost importance, both in the cure of incipient trouble and in the prevention of relapses following operations on more advanced cases, most recurrences being due to neglect of such measures.
3. Residence at the seashore has long been recognized as of great benefit; but there is reason to believe that a high and dry climate, such as that of Colorado, with its rarefied, stimulating atmosphere and abundant sunshine, possesses superior advantages.
4. A point of extreme importance in local treatment is to abolish sources of infection, in the teeth, tonsils, nose, ear, scalp, etc., and neglect of this is apt to result in failure.
5. Non-operative treatment is often of doubtful utility, except in the beginning of the disease.

6. Pulmonary involvement does not contra-indicate operation, at least in Colorado, except in advanced cases.

7. Curettement is applicable to sinuses, tubercular ulcers of the skin, and where complete removal would be attended by too much risk. In all other instances a thorough operation should be done.

8. The size and shape of the incision should be adapted to the particular case. It should be free enough to permit of thoroughness and safety.

9. The chance of permanent cure following operation is probably better in Colorado than in lower and less favourable altitudes.

DANGERS FROM THE INDISCRIMINATE USE OF MORPHIA.

T. D. Crothers, Hartford, insists that while morphia is a most valuable remedy and cannot be dispensed with in medicine to-day, it is an exceedingly dangerous one, and should be used with great caution and never continued long, except for special reason and under special conditions. In cases of carcinoma or culminating diseases that are incurable to a large extent, it is invaluable. Even here the derangement that follows its use is apparent, but this is insignificant when compared with the comfort it brings. There are other diseases often successfully controlled and managed largely by the use of morphia, but the wise physician anticipates and provides for the dangers and lessens them. The second fact he emphasizes is that morphia, given to neurotics and psychopaths, is almost certain to increase the brain and nerve degeneration, and even if it does not produce an addiction will increase the instability of control and the hypersensitiveness of the nerve centers. The possibility of narcomanias, including spirit addictions, is greatly increased, no matter for what purpose morphia is given. The third fact is, that morphia, while relieving the pain incident to the common disorders of the functional activities to the body, actually increases the disturbances of metabolism and favours the growth of toxins. The pain symptoms which it checks obscure the disease and make the treatment more difficult. By paralyzing the sensory centers, diverting nerve energies and breaking up their nutrition, this checking is always dangerous. Our knowledge of the good effects of the drug on the brain centers are obscure, but the injuries which follow its use can

be clearly mapped out in any clinical study. Another fact, although well known to all physicians, cannot be emphasized too strongly, namely, that proprietary drugs given for the purpose of controlling pain always contain dangerous and uncertain narcotics, and their use should be condemned. Reckless prescriptions over the counters of drug stores for sudden symptoms of pain are equally hazardous. Physicians should be more cautious in the use of narcotic drugs, particularly opium and its alkaloids, and should remember that many obscure diseases can be traced to reckless medication, and are the direct result of poison from morphia.—*N. Y. Med. Rec.*

CHRONIC PANCREATITIS.

BY B. L. HARDIN, WASHINGTON.

Chronic pancreatitis is caused by infection, the toxic material usually gaining entrance through the pancreatic duct sometimes through the general circulation. Obstruction of the duct by a gall stone is the most common primary cause.

Symptomatology.—The patient may have suffered with long continued chronic gastric catarrh. Suddenly he is attacked with severe epigastric pain. The pain, as illustrated in the case reported, is central and not over the gall-bladder. It radiates either to the back and interscapular region or toward the left. After lasting a variable time the paroxysm recurs with either regular or irregular intermittance, or there may be no paroxysmal pain, merely a deep-seated dull ache. Nausea and vomiting may accompany the paroxysms. In the interval the patient has anorexia, a sense of epigastric fullness and weight, belching or pyrosis. Sooner or later jaundice appears, the stools become putty-coloured, and the urine contains bile. With each paroxysm the jaundice deepens, and finally becomes permanent. Now there is a progressive and quite rapid loss of flesh and strength until a most perfect picture of malignant disease confronts us. Some patients have complained of a curious sense of faintness almost amounting to collapse, and often there is a moderate degree of fever at intervals, again resembling cancer. Diarrhoea or constipation may be present. The stools contain an excess of undigested muscle fiber and sometimes free fat. Lipuria is of rare occurrence. In advanced stages of the disease, glycosuria occurs, but sugar will not make its

appearance until a large portion of the gland parenchyma has been destroyed or functionally impaired, as has been experimentally proved by Opie. The pulse becomes slow when jaundice appears, and in the late stages there may be hemorrhages from various mucous membranes or into the skin. The patient finally dies of exhaustion.

On examination there is often a tender spot, central and about an inch above the umbilicus. There is more or less resistance to palpation over the epigastric region, and very rarely the enlarged pancreas may be felt. In a few instances when the enlarged pancreas presses on the vena cava ascites develops.

Diagnosis is very difficult. Thus far the best evidence of failure in pancreatic secretions is in the presence of an excess of indigested muscle fiber in the stools. Another good test is the absence of carbolic acid in the urine after the administration of salol. Unfortunately the presence of fat in the stools and sugar in the urine are of very little value as aids in diagnosis, for they are not present until a very late stage of the disease, when the pancreas is almost entirely destroyed.

Treatment is purely surgical, and is effected by clearing the ducts of obstructions so far as possible, and draining the gall-bladder or both ducts as the circumstances may demand.
—*Med. News.*

SOME REMARKS ON THE TREATMENT OF INTESTINAL PAINS.

By N. H. KASSABIAN, A.B., M. D., Coopersville, Mich.

At the beginning it is hardly necessary to point out that the treatment of pain in intestinal disorders is intimately connected with the treatment of the morbid condition of which it is a manifestation. In many instances after the removal of the source of irritation, the pain subsides of its own accord. Hence the determination of the cause is of the utmost importance. I have observed many instances in which an improper diet had given rise to a mild intestinal catarrh, characterized by intense pains, demanding speedy relief. Sometimes the pains are of true neuralgic character and seem to occur independently of the taking of food and cannot be attributed to an inflammatory condition. The patients are often neurasthenics or of an hysterical tendency,

Generally, however, there is more or less catarrhal inflammation due to irritant material, such as coarse food residue, or to bacterial action.

In most cases of intestinal pains however induced, the patient desires prompt relief of his suffering and will not wait for the action of evacuants, enemas, etc. Usually we are led to resort to some form of opium as the quickest way of affording relief. This, however, is objectionable, because of the effect of opium in checking secretions and causing constipation. The thought, therefore, occurred to me some time ago that as heroin is free from the constipating action of opium and does not affect the intestinal peristalsis or the secretions, it might replace the opiates with advantage in these cases. I have had an opportunity of prescribing it repeatedly in cases of intestinal irritation, and am more than pleased with the results obtained so far. It seems to possess the anodyne effects of morphine without its unpleasant sequelæ and depression, and this alone would warrant its administration in preference to the opiates.

In the following I have related the histories of a few cases to illustrate its effect in conditions of intestinal irritation.

CASE 1.—A man, about forty-four years old, consulted me some time ago for intestinal catarrh, which had annoyed him for several days. On inquiry I found that the catarrh which he complained of was the result of irritating substances in his food, causing an excessive secretion of intestinal mucus. I prescribed heroin hydrochloride tablets, each containing one-tenth grain, one to be taken every two to five hours, according to the frequency of the discharge from the bowels. Being a business man and obliged to work, I found it impossible to keep him at home, so I insisted that he should rest as much as he could, and also made some dietetic changes. In the course of twelve hours he reported to me that "the little white tablets had fulfilled their duty by checking the diarrhœa and the accompanying pain." Without any untoward effect his bowels resumed their normal condition. There was no tendency to constipation, as would have been the case if I had resorted to morphia.

CASE 2.—Mrs. G. was attacked with appendicitis, with very severe pain in the right iliac fossa and over McBurney's point. Having already administered a purgative, I was desirous to check the severe pains from which the patient was suffering. The condition of her heart and the prevailing depression contra-indicated an opiate. I thought I had at

better form of anodyne in heroin hydrochloride to soothe the patient and partially control the pains until the critical stage was over. I directed the nurse to give her one tenth grain of heroin hydrochloride every two to five hours, according to the severity of the pains. The relief obtained was most satisfactory. After a lapse of fifteen or twenty minutes the patient felt more comfortable, the pains having decidedly decreased in intensity. The same dose under similar requirements was repeated a number of times with the same gratifying results until the patient passed the crisis. The nurse reported that she did not have any difficulty whenever she used a rectal enema, the bowels responding to it very readily.

Case 3.—Mrs. M., who is subject to frequent attacks of diarrhoea resulting from a faulty digestion and a capricious appetite, consulted me some time ago. After instructing her in regard to the necessity of regulating her diet, as it played a very conspicuous part in causing her intestinal disorder, I prescribed for her the customary remedies without any appreciable benefit. Having assured myself that the whole trouble was referable to the irritated condition of the intestinal tract, I prescribed for her one-tenth grain of heroin hydrochloride and five grains of salicylate of bismuth every three hours alternately until relief was obtained; afterwards smaller doses were to be taken at longer intervals. Although the patient has had several attacks of the same disorder, still heroin and bismuth have a more desirable action upon her complaint and afford greater relief than other remedial agents.

CASE 4.—Mr. O., an aged gentleman, a veteran of two wars, exposed to all kinds of weather and hardships in his long course of life, consulted me for a dull colicky pain in his abdomen, more to the right under the umbilicus. I was told that he had rheumatism a short time ago, and a physician prescribed for him sodium salicylate, which he used for a long time in powder form without any vehicle with it whatever. The pains which he complained of seemed to follow the use of this remedy. Of course, I was inclined at once to diagnose his case as one of intestinal irritation, resulting from the continuous use of the salicylate. I put him on heroin hydrochloride and bismuth, using ordinary doses. The action of these remedies was all that could be expected. Whenever he had an attack of severe pains he would call for the powders, having absolute confidence in them as the most efficient "thing" he ever took for his pains.—*Cincinnati Lancet-Clinic*.

POST-OPERATIVE MALARIA, WITH A REPORT OF TWO CASES.

J. T. Moore, Galveston, maintains that blood examination by the microscope should be made of every case from a malarial locality before operation. He is convinced that many infections that have laid dormant for weeks, and even for years, may be rekindled, and become not only a complicating factor, but may throw the balance against the patient and result in his death. He also believes that many cases are operated upon in malarial localities that could have been cured by recognizing the presence of the parasites and giving anti-malarial treatment. There are probably many instances in which a careful blood examination before an operation would have saved the sacrifice of the pelvic organs of the cases in which all the symptoms were attributed to disease of the uterus, ovaries, or tubes. Malarial fever is often aroused from latency to activity by some injury or surgical operation. Blood examination here will not only enable one to save his patient often, but will also at once explain the cause of a chill and high fever, without waiting for the therapeutic test, which at best is uncertain. These facts are illustrated by a report of two cases which came under the author's own observation. Finally, malarial fever, especially the chronic forms, brings about a most unfavourable condition for the healing of wounds and the reaction from the shock of the anesthesia and operation.—*N. Y. Med. Rec.*—*St Louis Med. Rec.*

ACUTE ARTICULAR RHEUMATISM.

McRae, Thomas. *Journal of the American Medical Association*, vol. xl., No. 4, p. 211, Jan. 24, 1903.

This report is based on the study of 294 cases of acute rheumatism admitted to the Johns Hopkins Hospital from 1899 to 1902. The cases represent 270 individuals and constitute about two per cent. of the entire medical admissions; the proportion of males and females was about the same as in the entire number of medical admissions. The largest number of cases occurred in the age period 21 to 30, though we are reminded that there are comparatively few children admitted. There was no marked increase in cases of individuals who worked out-of-doors, and hence were more or less exposed to changes of weather. Fifty-five per cent. of the cases occurred in February, March, April, and May, and

three-fourths of the total number were in the first six months of the year. This is in contrast with figures from the London hospitals, where the maximum is in the autumn months. The family history presented rheumatism in only sixty-nine cases, and there seemed to be no special relationship between a family history of the disease and the severity of the attack. The previous history was negative in 25 per cent. while in 45 per cent. there was a history of previous attacks of acute articular rheumatism. A fairly marked alcoholic history was given in 39 per cent. of the cases. The age at the time of first attack was known definitely in 255 cases; in three-fourths of these the age was below 30.

There was a definite history of exposure to wet or cold immediately before the attack in 12 per cent. Arthritis was the first symptom noted by the patient in 82 per cent. Chills at the onset occurred in 6 per cent. of the cases. This latter symptom is rarely referred to as one of the initial signs of rheumatic fever. Tonsillitis was the symptom of onset in ten cases, in only one of which was it associated with chill. There was only one instance in which trauma appeared to be an exciting cause. This patient was struck on the shoulder by a piece of timber and was severely injured. The next day other joints were inflamed, but not the injured one.

One of the symptoms, arthritis, was the most prominent, the knees begin most frequently involved. The arthritis of the lower extremities was most often symmetrical, the contrary being the case when the upper extremities were involved. The average duration of fever in 254 cases was twelve days, but it is to be remembered that a number were admitted late in the affection whose fever subsided rapidly after admission. The fever persisted for a period of over four weeks in twenty-six patients. Two types of fever were noted—those in which the temperature persisted at an average of about 103° for several days and then rapidly subsided, and those in which the average was 101° , but in whom it persisted for a much longer time. The joint symptoms in these cases may be identical.

The cardiac conditions in all of the cases were carefully noted. There were 38 per cent. with clear heart sounds throughout the course of the disease. Thirty-two per cent. presented unquestioned organic lesions, and in seventy-eight cases, or 28 per cent. the exact nature of the cardiac changes was doubtful. Sixty of these were discharged with a cardiac

murmur. In eighteen there was a murmur present at some time during the course of the disease, which disappeared, and the patients were discharged with clear heart sounds. Pericarditis occurred in 5.9 per cent.

In treating these cases the patients are put on a milk diet and kept absolutely at rest in bed. Large quantities of alkaline water are administered. They wear flannels and are between blankets. Sodium salicylate in doses of 15 grains is administered every two or four hours for one or two days, or until the pain is relieved; then oil of wintergreen in doses of 15 drops four times a day is usually substituted. With this the potassium salts are given in doses sufficiently large to render the urine alkaline. The joints are kept in cloth saturated with lead and opium lotion, or the oil of wintergreen is applied. The latter has been found especially helpful. Fixation of the joint is frequently employed. Pain, one of the most frequent complications, is relieved by one of the coal-tar products or by morphine.

Three patients died, a mortality of 1.1 per cent. All the fatal cases had carditis

PUERPERAL INSANITY.

By ROBERT JONES, M. D., LOND., M.R.C.P.

Resident Physician and Superintendent London County Asylum, Claybury.

This paper is based upon a personal experience of 259 cases of puerperal insanity, divided into 120 cases commencing during the actual puerperal period, 83 during lactation, and 56 during pregnancy. Insanity occurs once in every 700 confinements. It is of a characteristic form after confinement, amounting to an almost nosological entity; but this is not the case during pregnancy or during lactation, there being no definite type of insanity occurring in connection with these two stages. The divisions are, however, more convenient than typical. The following propositions may be advanced:—1. The insanity of pregnancy is more common in first confinements among single women, the disappointment, shame, and disgrace of illegitimacy being an important factor in the mental breakdown. 2. During the pregnancy the mental condition is more often acute melancholia than acute mania, and suicidal symptoms, which occur in 41 per cent., have to be carefully guarded against. 3. The insanity of pregnancy is

divided into that occurring during the early months and that occurring during the later months, and in these the nearer the insanity in point of time to the confinement the more acute are the mental symptoms. Insanity is not more frequent when the sex of the child is male. 4. The insanity of the puerperium comes on after the first confinement in 33 per cent. of the cases and supervenes suddenly rather than gradually. 5. The cases which occur during lactation present characters of marked general physical exhaustion and mentally are more often of the depressed than of the maniacal form. Lactation insanity becomes chronic oftener than the insanity of the other periods. There is a tendency to low forms of inflammation, thrombosis, gangrene and phthisis during the insanity of lactation. Both suicidal and infanticidal promptings are more common in lactation than in puerperal cases—that is, in cases where insanity commences more than six weeks after confinement. 6. The early symptoms of threatening insanity are loss of sleep and headache, and these should be a forewarning of mental breakdown. The busy delirium of hallucinatory type ending in acute restless, purposeless mania with religious and erotic delusions, is characteristic of this variety. 7. As regards etiology, heredity is more marked and in the direct maternal line in puerperal and lactational insanity and is equally paternal and maternal in the insanity of pregnancy. A previous record of hysteria is frequent in puerperal insanity. 8. The pathology is that of heredity and stress. Is the stress due to toxin? 9. As regards prognosis, cases of insanity during early pregnancy improve towards the end of pregnancy, whereas those of late pregnancy become worse at the puerperium. Puerperal insanity is markedly recoverable. Improvement is often rapid, being often complete in three months, but generally taking from four to five months. 10. With regard to treatment, all cases presenting headache and sleeplessness must have absolute quiet and rest, and sleep must be procured. Home treatment is desirable in all cases if possible. Unusual and sudden impulses of suicide and infanticide must be guarded against. The presence of the husband aggravates the symptoms. There is much necessity for a liberal and stimulating dietary. Change is necessary in puerperal insanity when cases tend to become stuporous. Menstruation is a sign of mental improvement. Purgatives and iron are well borne. The following special questions were put forward by way of criticism. 1. Was there such a disease as puerperal insanity—a mental alienation which was either caused by the puer-

perium or an accompaniment of this physiological crisis? 2. If there was, were the mental conditions due to toxæmia or to septicaemia, or to both? Or was the delirious mania which occurred in connection with this period due to extraordinarily emotional disturbances? How far did the moral factor enter into the etiology, and how far did pregnancy in the unmarried state influence the causation of insanity? 3. What was the relation between mania and melancholia? 4. What was the essential pathology of this disease? 5. What was the relation between albuminuria and pregnancy? and also between albuminuria and the puerperal state? 6. In Dr. Jones's cases, so far as the history could be obtained from the relatives or those present, no prodromata of insanity beyond sleeplessness and headache were as a rule noticed, and the onset of insanity was sudden; what was the nature of the onset in the practice of obstetric physicians? 7. As to prevention and treatment, did hysteria in youth manifest itself by insanity in later life at the puerperal or other physiological crisis, and should marriage be discountenanced in these? What views should be generally held as to the marriage of neurotic persons? What were the views as to home and asylum treatment, as to local and general treatment, and, a more especially important point, as to the induction of premature labour.—Dublin Medical Press.

NOTES ON A NEW SYSTEM OF TREATMENT IN PULMONARY PHTHISIS.

Dr. D. Turner (*Lancet*, Oct. 18, 1902) describes this new method, which would seem to offer certain therapeutic advantages. The author's system of treatment consists in the external application of cod-liver oil and creosote, together with electricity and massage. The patient, after being hardened by repeated cold spongings for several days, lies on a couch, all clothing being removed. The body is first sponged with a weak solution of sodium bicarbonate, and then the oil solution is thoroughly rubbed in all over the trunk, the process taking a quarter of an hour. The solution employed consists of a mixture of four drachms of creosote or guaiacol, one drachm of oil of citronella, and cod-liver oil to make up four ounces. The author cites four cases treated by this method, in all of which marked improvement took place.—*Med. Age*.

HOT WATER IN SCARLATINAL NEPHRITIS.

Hot water irrigation of the bowels should be employed whenever the quantity of urine is diminished or when

convulsions occur. In a child aged three years, 500-700 c. c. water at a temperature of 43 degrees C. should be introduced by means of a rectal tube passed into the rectum for a distance of $2\frac{1}{2}$ c. m. If the water is returned at once the process is repeated and irrigation should be performed every six or eight hours. After three or four administrations the kidney begins to act, and abundant diuresis takes place.—*Kerley Med. Jour.*

NIGHT SWEATS.

In the night sweats of phthisis camphoric acid in dose of half a drachm taken one hour before bedtime is a valuable remedy. This dose is best given on the tongue and washed down with a swallow of water. Other drugs of use are atropin, picrotoxin, agarcin, acetate of thallium, guaiacolate of piperidin. Of late the opinion has been expressed by several observers, that since the perspiration of night sweats has been found on analysis to contain tuberculin, that no attempt should be made to lessen the sweating, but that on the other hand it should be encouraged.—*Jour. Amer. Med. Sci.*

CHRONIC ECZEMA.

A *confrère* asserts that he obtains the radical cure of eczema where it occurs in isolated patches on the upper extremities and so rebellious to the ordinary method of treatment, as follows: After having washed thoroughly with soap and water the part, and dried it, he rubs in vigorously a fifty per cent. solution of caustic potash by means of a plug of cotton tied to a rod; he then washes the spot freely with water, and, finally, paints it over with a fifty per cent. solution of nitrate of silver, and envelopes the whole in aseptic cotton. This dressing is left in place until the cicatrix is formed beneath the slough or from one to two weeks. The itching ceases immediately after the application of the caustics. Out of thirty cases thus treated, only one required the operation a second time.—*Med. Press and Circular.*

THE PREVENTION OF SICKNESS AFTER ANESTHETICS.

Blumfeld, in the London *Lancet*, says that some of the chief points to be attended to in the avoidance of after-sickness are: (1) Use as little of the anesthetic as possible consistent with perfect anesthesia; (2) wash out the stomach at the close of the operation when much mucous has been swallowed; (3) in long operations substitute chloroform for ether after

three-quarters of an hour ; (4) move the patient about as little as possible during and after operation ; (5) place him on his right side in bed with the head only slightly raised ; (6) give nothing but hot, thin liquids in small quantity for at least eight hours after ; and (7) do not alter the temperature of the room for some hours. With proper attention to these points one-third of the patients operated on will be free from after-sickness, and for short operations the proportion will be much higher still. In fact, after all administrations up to twenty minutes, or not much longer, sickness will be found to be the exception.

SURGERY.

IN CHARGE OF

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TREATMENT OF HEMATOMATA WITH OLIVE OIL.

Dr. Camescasse (*Revue de Therapeutique*, December, 1902) advises the application of olive oil in all cases of contusions and hematomata. No rubbing in is necessary—it is indeed painful and therefore to be avoided—but the oil is simply sprinkled on or applied on lint. If the skin is broken a previous cleansing with some antiseptic is advisable. The mode of action of the remedy is not clear, but the rapidity and effectiveness of its action are said to be remarkable. A black-eye thus treated disappeared so quickly and completely that the victim was inclined to complain on the ground that he had no visible injury to show to the police.—*The Practitioner*, London.

THE ENTRANCE OF AIR INTO THE VEINS.

By H. A. Hare, M. D., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Hospital.

I have read with a good deal of interest a paper upon this subject contributed by Dr. Malcolm Goodbridge, of New York, to the *American Journal of the Medical Sciences* for September, 1902. So far as I am aware, the most exhaustive experimental work which has been done in connection with this subject is that of Dr. Nicholas Senn, which was published in the Transactions of the American Surgical Association for 1885, and my own work, reported in the *Therapeutic Gazette* for 1889, page 606. Dr. Senn's experiments involved the use of different kinds of animals, but my own were confined almost entirely to dogs, and were made in ignorance of the very valuable research which had previously been carried out by Dr. Senn.

Having been taught as a student of medicine that the entrance of air into a vein, even in a minute amount, was followed by most disastrous results during surgical operations—having been warned that, should such an occurrence take place while giving an hypodermic injection, death might ensue—I was struck with the fact that when intravenous injections of various substances were given to some of the lower animals, and considerable quantities of air entered a vein, no appreciable results took place even if the jugular vein received the air. After these observations on my part had been confirmed by a large number of experiments in which the injection of air took place inadvertently, I carried out quite an exhaustive study in which I deliberately injected air into the jugular vein of dogs for the purpose of seeing how large quantities could be borne without producing death, and demonstrated the innocuousness of these injections to medical students of the University of Pennsylvania, where I was then teaching to several of my colleagues, and finally before the Philadelphia County Medical Society, on that occasion injecting as much as sixty cubic centimeters of air into the jugular vein of a small dog that weighed about twelve pounds, without the production of any symptoms whatever. I mention these preliminary facts as they have some bearing upon the remarks which are to follow, which remarks, to a certain extent, take issue with those of Dr. Goodbridge, both as to his quotations from Dr. Senn and from myself, and as to the conclusions which he draws from his own experiments.

In the early part of Dr. Goodbridge's paper he states

that the researches of Dr. Senn and myself impress him with the fact that the personal equation of an investigator plays no insignificant part; for, "on the one hand, Hare, after experimenting with some seventy dogs, asserts that even large quantities of air do little harm;...on the other hand, Senn found that small quantities of air when injected into the jugular vein proved fatal in a large percentage of his dogs." As a matter of fact, this statement in regard to Senn's results is incorrect, as will be seen when page 72 of Dr. Senn's brochure on this subject is examined, where, in his remarks on his experiments, he states that a small amount of air in the right side of the heart in a healthy animal gives rise only to temporary symptoms referable to the heart's action and the pulmonary circulation, and, again, when he states, a few lines below, "that the danger attending the insufflation of air into the veins is proportionate to the amount of air introduced as well as the capacity of the right ventricle to resist intracardiac pressure." It is interesting in this connection, although not directly in point at this time, to remark that Dr. Senn found it practically impossible in all his experiments to cause the entrance of air into a vein of the neck or into the longitudinal sinus unless he employed a syringe for the purpose of injecting it.

At the close of Goodbridge's paper he concludes that the entrance of air into the veins even in small amounts is to be dreaded, as it results in death. Whether this conclusion is correct as it relates to man is doubtful. As is well known, there are a number of cases on record in which air embolism is supposed to have been responsible for death in the human being, although, as far as I know, the possibility of ordinary embolism having produced death in these cases has not been excluded. There are other cases of air embolism in man which were not disastrous.

The point is that Dr. Goodridge is not justified in making the assertion quoted, nor do his experiments justify him in the still more radical assertion that he believes the statement that large quantities of air may be introduced into the veins without unfavourable results to be "pernicious teaching, and not supported by fact." The results of my work and that of Senn seem to prove that air embolism in small amounts is not usually lethal, while Goodridge's own experiments support our earlier researches instead of controverting them.

When we come to examine the experiments upon which Dr. Goodridge has based his conclusions, we find that a serious error has occurred as to the amounts of air which

he has injected. Surely a wounded vein would not be apt to draw in very large quantities of air; even if the patient was struggling violently, and the experiments of Senn and myself certainly prove that small amounts of air introduced into the veins of animals practically never result fatally; while if any further proof of the fact that air may enter a vein without producing death is required, I may state that I have in my own experience seen a considerable quantity of air—amounting to as much as from two to three cubic centimeters— injected into the median basilic vein of two human beings without producing any symptoms whatever; while a third patient, who received a similar dose, shortly afterward had a decided rigour, which at the time was supposed to be due to the fact that the saline solution was unduly cold, and not to the air embolus which entered inadvertently. It is a noteworthy fact that in all Dr. Goodridge's experiments enormous quantities of air were injected into the veins, and, furthermore, that this injection was completed within a very few moments. Thus in one dog, weighing forty pounds, seventy-five cubic centimeters were injected into the femoral vein, which would be equivalent to the injection of three hundred cubic centimeters in a man of one hundred and sixty pounds—an amount which could scarcely enter a wounded vein during an operation by any possibility unless it was deliberately forced into it. So, too, in his Experiment No. 10, notwithstanding the fact that seventy-five cubic centimeters was injected into a dog weighing thirty-four and one half pounds, recovery took place, so that five days later the animal was recorded as being perfectly well, and on the sixth day was again subjected to an injection of seventy-five cubic centimeters, with the result that the dog "died." It is a noteworthy fact, however, that in Dr. Goodridge's report of this experiment he states that when the thorax was opened, after the supposed death of the dog, the auricles were spasmodically contracting, the right ventricle was distended with air, the heart was fibrillating, and that this continued for fifteen minutes. It would seem possible, therefore, that had the "autopsy" not been performed so soon the dog might have survived even the second injection, since other dogs that did not come to immediate "autopsy" recovered. In his thirteenth experiment the animal received altogether two hundred cubic centimetres of air, in injections varying from fifty to seventy-five cubic centimeters each; and although the animal was apparently dead, it eventually recovered and was killed with chloroform. This animal received an amount of air in twenty-

four minutes, which is equivalent, in a man weighing two hundred pounds, to a litre, or about one quart; while in Experiment 15, three hundred cubic centimeters given to a dog weighing less than forty pounds did not produce death, and it required a total of four hundred cubic centimeters to produce this result. The equivalent to this injection in a man of one hundred and sixty pounds would be about three pints of air.

It is not necessary to quote further experiments which illustrate the fact that the doses of air which were employed by Dr. Goodridge were so massive that their effects cannot be compared with those which are produced by those minute quantities of air which might, perchance, be drawn into a vein. It is also a noteworthy point that not only did some of Dr. Goodridge's dogs survive these enormous injections, but in several instances he states that they recovered so rapidly that subsequent experiments were made upon the same animals. According to his own summary of his results, nine dogs recovered after aspiration of their hearts, while two others, which finally recovered, required large quantities of air—"two hundred and fifty to four hundred cubic centimetres"—to be injected forcibly before the pulse disappeared temporarily.

Dr. Goodridge also states that rapid injection of air is an important factor in producing bad results, and that considerable quantities of air may be slowly injected without any serious effect.

I do not doubt that such a quantity of air as eight hundred cubic centimeters, or nearly a quart, would produce a disastrous effect if it found entrance to the jugular vein of a man, and I do not deny that much smaller amounts may cause alarming symptoms, or even death. My claim is—and it is supported by the exhaustive experiments of Senn and myself, my personal experience with air embolism in man, and by Goodridge's own observations—that even a large air embolus is not as fatal as a small air embolus has been thought to be, and that the danger of the occurrence of air embolism is very slight. As was proved by Senn's researches, it is useless to conclude from massive injections in dogs that small ones in man are deadly.

Finally, it is not to be forgotten that in all probability different resistance to air embolism exists in different animals. Rabbits and monkeys are very susceptible, whereas dogs and goats are extraordinarily immune.—*The American Journal of the Medical Sciences.*

**CASES ILLUSTRATING SOME IMPORTANT POINTS IN
THE DIAGNOSIS AND TREATMENT OF ABDOMINAL
CONTUSIONS ASSOCIATED WITH VISCERAL
INJURIES.**

G. E. Brewer reports nine cases, three of which recovered. The cases variously presented ruptures of the liver, spleen, kidney, intestines, internal iliac vein, innominate, bone, ureter and bladder. This class of injuries calls for prompt operative measures. In every case one of the arm veins should be exposed so as to allow of immediate saline infusion. Brewer believes that the treatment of extensive fractures of the spleen by pressure and packing is preferable to splenotomy, it being equally as effective in arresting hemorrhage. It is accompanied by less shock, saves time, and preserves an important organ. The same general principles apply to the liver. From a study of twenty cases of visceral injury following abdominal contusion, and verified by operation or autopsy, the author finds that the most important symptoms present in the earliest stages are pain, tenderness and muscular rigidity. The association of these three is almost pathognomonic of peritoneal irritation. In the absence of spontaneous pain, localized tenderness with rigidity is strongly suggestive of visceral injury. Of the three, muscular rigidity is the most reliable, and sometimes the only sign present. In such instances it may be looked on as nature's effort to protect an injured organ from further irritation.

Other signs are vomiting (more common in injuries affecting the stomach and upper bowel), free fluid and free gas in the abdominal cavity. Concerning the diagnostic value of localized signs and symptoms, the author offers the following: If, following an abdominal contusion with or without evidences of superficial injury, there are localized pain and rigidity over the epigastrium with the presence of free gas in the peritoneal cavity, a rupture of the stomach may be suspected. If, under the same circumstances, there is pain and tenderness limited to the right hypochondriac region and rigidity of the upper half of the right rectus muscle, with free fluid in the peritoneal cavity, and with a progressive weakness, pallor, cold perspiration, restlessness, air hunger, thirst, and a rapid, weak pulse, rupture of the liver with severe hemorrhage is to be inferred. The same symptoms and signs limited to the left hypochondrium suggest a rupture of the spleen. Pain and rigidity about the umbilicus or in the lower part of the abdomen without other symptoms suggest rupture of

the intestine. The diagnosis is rendered more probable, if, in addition, free gas can be demonstrated in the peritoneal cavity. Pain in the hypogastrium, with vesical tenesmus and the passage of a small amount of bloody urine or an empty bladder, indicate rupture of that organ, while pain in one flank, with haematuria and the formation of a retroperitoneal exudate, suggests contusion or rupture of the kidney.—*Annals of Surgery*.

THE PRINCIPLES OF PROTECTION AGAINST ROENTGEN LIGHT DERMATITIS

Carl Beck, New York, states that it is impossible to make definite rules for protection against the possible injuriousness of the Roentgen rays. It should always be remembered, upon first treating a patient, that an idiosyncrasy may exist, and that the only way to determine this question is by tentative exposures. When the light is used merely for diagnostic purposes, the possibility of an idiosyncrasy existing needs little consideration, for, by our present methods, the length of time for exposure is quite short, but when repeated exposures of ten minutes time are necessary, this question, as well as the one of ordinary cumulative irritation, should be considered, and, therefore, the intervals between the exposure should be made long, one week on an average. Protection in exposing for diagnostic purposes is a chimera; the shield, if used, obstructs the rays and the details of the skiagraph are lost. If the rays are used for therapeutic purposes, the possibility of susceptibility deserves attention. When treatment is for non-malignant disease, careful tentative exposures should precede it. The first exposure should be for five minutes, with a soft tube, and the light should be just strong enough to show the carpus of the operator black without structural details and contrasts to the soft tissues. The distance of the tube should be four inches from the skin. If after one week a repetition of the exposure causes no dermatitis, a third may follow, lasting ten minutes, and thereafter the part may be irradiated every second or third day, and at last daily, until reaction manifests itself. The vicinity of the irradiated area must be protected with a thick shield of lead. In treating malignant disease, entirely different principles govern. The object is to reach all malignant cells possible, and the shield should not be made use of. The patient suffering from malignant disease is irradiated

without first submitting to tentative exposures. The tube should be as near the tumorous area as possible, the distance of the tubal wall from the skin never exceeding two inches. After there is a slight erythematous reaction within the immediate vicinity of the growth, the distance is increased at the next exposure, so that the rays gradually reach a larger area. When this wider field also becomes erythematous, the irradiation must be stopped for a few days until it shows signs of disappearing. If the skin is concerned, soft tubes must be employed, but deeper infiltration requires tubes of medium hardness. With our present means, powerful and long irradiation is a necessity, and this, unfortunately, entails the provocation of the dermatitis. Whenever a dermatitis has appeared in the author's experience, the size of the growth has diminished, edema and pain have decreased and the general condition of the patient has improved.—*N. Y. Med. Rec.*

THE RADICAL CURE OF INGUINAL HERNIA WITH LOCAL ANESTHESIA.

J. A. Bodine, New York, advocates the more general use of local anesthesia in the radical cure of inguinal hernia since the danger in herniotomy is represented very often alone by the danger of general narcosis. He briefly reports a series of forty-eight cases of radical operation without general anesthesia. In all the cases, muriate of cocaine was used as a local anesthetic, and in no instance was one-half of one grain of the drug exceeded. The anatomy involved in the operation makes herniotomy peculiarly well adapted to local anesthesia. The operative area is superficial, ligation of a bleeding point is scarcely ever demanded, intraperitoneal or visceral work, if needed, is of short duration, and of the most importance, the sensation of the entire field of work is presided over by three nerve trunks, which are superficially placed and easily found. These three are the hypogastric branch of the iliohypogastric, inguinal branch of the ilioinguinal, and the genital branch of the genito crural. The largest, most constant and easiest found is the iliohypogastric, which runs from the iliac crest inward, just beneath the aponeurosis of the external oblique muscle. If it is large, one or both of the other two may be absent, and a little time should be spent in their search. If the first nerve is found

and cocainized, the pain can be almost entirely controlled by occasional infiltration into areas known to be sensitive. In the forty-eight cases, all three nerves were identified seventeen times, the iliohypogastric and ilioinguinal twenty times, and the iliohypogastric alone forty-eight times. The technique of the operation is given in detail. Two suggestions of proven worth are offered : (1) If a strip of dry gauze is used to hold up the cord, it may, during the necessary manipulations, roll the cord on its long axis, and exposure to air causes agglutination in this position of torsion. A wetted strand of catgut as a retractor will obviate this danger. (2) The deep sutures should include in the bite only one-half the thickness of the conjoined tendon. This gives perfect apposition to Poupart's ligament, and does not induce pressure necrosis with cutting out of stitches because blood supply is not endangered. One-fourth of 1 p. c. solution of cocaine is used for the skin and nerve trunks, while for sub-dermic infiltrations one-tenth of 1 p. c. is sufficiently strong. The former solution, when properly infiltrated, will completely anesthetize the skin for one hour and a half. In eighteen cases reported there was entire absence of pain ; in twenty-eight the pain was moderate, and in two it was acute when ligating the neck of the sac.—*N. Y. Med. Rec.*

GOITRE.

It has been my opinion for some years past that iodine alone was the essential medical remedy for the removal of such goitres as could be influenced by medicine, and with this idea in mind I have, during the last four years, treated three-fifths of my cases with iodine, and two-fifths with the thyroid preparation, and have found in thirty thus treated that the patients who received the iodine improved more rapidly than the others, and during the last three months my patients have been taking iodine, only accompanied by tonics as required. Few of them can take iodine steadily for many weeks without showing evidence of weakness ; slight anemia is likely to follow, with increased rapidity of the heart's action ; often slight dyspnea and headache with diminution of bodily weight. The prescription is as follows :

R_y Iodi (crystals).....2 grains.
 Pot. Iodid.....4 grains
 Spir. Vini. Rect.....1 drachm.
 Syr. Simplicis.....1 drachm.
 Aquæ Destill.....2 ounces.

M. Sig.: A teaspoonful in a wineglassful of water, one hour after each meal-time.

After about two weeks, sometimes from the beginning, an iron tonic is given; and if the patients are weakening rapidly, strychnine combined with calisaya and iron, the iodine being discontinued for a week or two at a time. After three weeks there is usually a perceptible difference in the size of the goitre. In six months many of the goitres disappear, others are reduced to from one-half to one-eighth their original size.—Frederick G. Schaefer, in *Jour. Am. Med. Asso.*

PROTARGOL AND ITS USES.

The salts of silver, both in solution, powder and ointment have become very popular as antiseptics during the last few years and are now very extensively used in all branches of surgery. The most generally used and the most valuable of these preparations is protargol.

Having passed the experimental stage it may now be safely asserted, that protargol is one of the most important additions to the materia medica of recent years. Aside from its general use in the treatment of gonorrheal affections it has to a great extent displaced nitrate of silver in diseases of the eye, ear, nose and throat. To obtain uniformly good results attention has been lately drawn to the importance of exercising proper care in making the solutions, a point which has, quite recently, been especially emphasized by Professor Neisser. A clear and satisfactory solution can be secured in any one of the following ways: Stir the protargol powder into a thick and smooth paste with a little cold water and then add the bulk of the fluid. This should be done in a glass or china vessel, using a glass rod; if in a mortar, the latter as well as the pestle should be slightly moistened with a few drops of glycerine. Protargol may also be readily dissolved by dusting the powder evenly upon the surface of the water and allowing the fluid to stand without stirring for about ten minutes. It is very essential that only cold water should be used in making the solutions, as with warm water the drug is to some extent decomposed, and then becomes less active and may cause irritation; for the same reason the solutions should be preserved in dark colored yellow bottles. In acute gonorrhea the average strength of the solutions ranges from 0.5 to 2 p. c.; in chronic urethritis, up to 5 p. c.; in diseases of the eyes, ears, nose and throat, 2 to 10 p. c.; as an application to wounds and ulcers, 1 to 2 p. c.

solutions and 5 p. c. ointments are in use. Unlike nitrate of silver, protargol does not stain the skin even in concentrated solution, although a marked staining of the mucous membrane of the eye follows the prolonged use of a 2 p. c. solution. The solutions commonly employed in gonorrhea also do not produce stains of the clothing, or if they do, only cause slight discolouration, which can be easily removed with warm soap and water. The much stronger solutions of 20-50 p. c. sometimes leave behind brownish-yellow stains on the clothing; if recent, these can be removed with soda and ammonia; if old, by the action of peroxide of hydrogen in the presence of ammonia.—*St. Paul Medical Journal*.

THE USE OF ARGYROL IN THE TREATMENT OF ACUTE GONORRHEA.

Swinburne (*Medical Record*, New York, October 11, 1902) states that argyrol comes in dark-brown scales, is very hygroscopic, and is soluble to almost any degree in water. The solutions keep well without deteriorating. It contains nearly thirty per cent. of silver. It possesses one drawback, and that is its staining properties. On account of this it has to be very carefully used, for though when treated with boiling water the stains are readily removed, yet it is distinctly disagreeable to the patient to get it on his underwear. The author has treated with this drug at a dispensary upward of three hundred and fifty cases having gonococci. In the beginning the patients were given a single daily injection of two and a half to three drachms of a one per cent. solution, which was held by the patient for ten minutes in the anterior urethra. Cases in which the posterior urethra was involved received in addition a deep instillation of an ounce of the solution through a small flexible catheter, which was then withdrawn and the solution urinated out. Those cases that came regularly recovered completely in a moderately short time. After these injections there was absolutely no reaction and no pain.

In private practice the author uses several methods according to different circumstances, such as the severity of the disease, the chance of aborting the disease, and the patient's ability to come frequently or not. Treatment may be daily, and in such cases irrigation with one quart of hot one to one thousand or one to two thousand solution of argyrol, followed by a two or five per cent. injection or instillation, as the case demands, with the patient's use

of a two per cent. solution at home, once or twice a day in addition, or it may be no injections are used by the patient at home. Some patients may only be able to come once or twice a week—they get the same treatment when they come to the office, and use a two per cent. solution two or three times a day at home. In chronic cases good results follow the use of this drug. Cases needing sounds get now, as a lubricant on the sound, a five per cent. ointment made with adeps lanae as a base, the argyrol being rubbed up with water just enough to render it smooth before incorporating it with the ointment. Too great stress can not be laid on the painlessness of the drug. A ten per cent. solution dropped in the eye hardly produces a sensation of warmth. To sum up, this drug has decided gonococcal powers; it has a decided effect in reducing and allaying the inflammation of the disease; it can be used safely in almost any strength and at any stage of the disease; the injection can be repeated almost as frequently as the fancy of the physician dictates; the author has not seen any unpleasant symptoms due to the use of the drug and believes it to be one of the most valuable remedies given to the profession in recent years.—*The Journal of the American Medical Sciences.*

A NEW METHOD OF EXTRACTING FOREIGN BODIES FROM THE EAR.

There is no more delicate and even difficult task, so states the *Medical Press*, than the extraction of a foreign body from the external auditory canal. Irrigation often fails to bring it away, and in certain cases adds to the difficulty by causing the object, a pea for instance, to swell and become more firmly impacted. The employment of instruments is very painful, and requires considerable dexterity, besides supposing an armamentarium specially designed for the purpose, which few general practitioners possess. The recommendation is made of a piece of soft rubber tube, the length of a cigarette, and of the proper size, to be introduced into the ear. The end of the tube is dipped in paraffin and pushed into the canal until it comes in contact with the foreign body, whereupon the operator, applying his mouth to the free end, aspirates forcibly, at the same time throwing back his head. Except in cases of angular bodies of irregular contour this method is usually attended by success, the body coming away with the tube.—*Journal of the American Medical Association.*

EGG IN FELON.

I saw in a journal some one recommended the skin of an egg in felons. I used to hear it recommended when a lad, but never saw much benefit from it. For the last fifteen years I have used the whole egg and have yet to see a case it will not cure, if it is a real bone felon. I use it thus: Take a fresh egg and crack the shell at the largest end, making a hole just large enough to admit the thumb or finger, whichever it may be, and forcing it into the egg as far as you can without further rupturing the shell. Wipe off the egg which runs out, and bind round the whole a handkerchief or soft cloth; let it remain on over night, and generally your felon is cured; if not, make another application. I have yet to see the case where it has failed, and should be pleased to hear from anyone trying this where it has not cured.—Dr. J. A. Whitman, in *Med. Visitor*.

OPERATING PHIMOSIS WITHOUT
CIRCUMCISION.

Dr. Lambert, of Dunkirk, operates phimosis without having recourse to the classical method of circumcision. His method is based on the principle that the phimosis comes from atresia of the mucous membrane, and that it suffices to effect a cure by simply increasing the diameter of the membrane without touching the cutaneous envelope.

After having prepared the parts by means of antiseptic irrigations, and made one or two injections of cocaine to obtain the necessary degree of anesthesia, he seizes the prepuce with three forceps disposed at equal distances from each other. Taking a pair of scissors, he makes a small nick in the mucous membrane between each forceps, through which he introduces the fine point of the scissors, passing between the membrane and skin, and slits up to the sulcus. The prepuce thus dilated, the glands become free. The small incisions are sutured, and the wound dressed in the usual way. The prepuce is then drawn over the gland, remaining thus dilated until the cicatrization is complete.—*Paris Cor. Med. Press and Circular*.

Book Review.

The Refraction and Motility of the Eye. For Students and Practitioners. By William Norwood Suter, M.D., Assistant Surgeon Episcopal Eye, Ear and Throat Hospital, Washington, D.C. Illustrated with 101 engravings in the text and 4 plates in colours and monochrome. Lea Brothers & Co., Philadelphia and New York, 1903.

Dr. Suter divides his book into four parts. In the first part the optical principles which are involved in the study of the refraction of the eye are discussed in a thorough manner, and while this necessitates the introduction of a good many mathematical problems, these can be grasped by a little patient application.

Part II. describes the normal eye as regards its refraction and motility. In the third part the various methods of estimating the refraction of the eye are explained in detail with the aid of many diagrams.

The fourth and last division of the book describes the disorders which may occur in the motor apparatus of the eyeball. The book is attractively bound and well printed and can be heartily recommended to the student of ophthalmology.

G. H. M.

SUMMER COMPLAINT.

The mucous membrane of the gastro-enteric tract rids itself of the inciting material of Summer Complaint with the assistance of very little internal medication, though this act is not performed without making a demand upon the general storehouse of energy. Add to this the depression caused by toxæmic absorption and the marked exhaustion of an acute attack is readily explained.

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